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EDITORIAL ANALYSIS

The Water We Forget: Why Freshwater Life Is Vanishing Faster Than Any Other

DOWN TO EARTH

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CURATED & WRITTEN BY

Bharat Choudhary

UPSC Educator & Content Creator

linkedin.com/in/epicbharat

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THE LIFT LINE

When we picture biodiversity loss, we imagine a shrinking forest or a stranded polar bear. We rarely picture a river. Yet freshwater and coastal ecosystems are collapsing faster than terrestrial ones, and the **Living Planet Index** records some of its steepest declines in freshwater species. The reason is simple and brutal: a river receives every insult the land sends downhill, all at once. The **IPBES Nexus Assessment** says the fix cannot be piecemeal. Water, pollution, food and land have to be governed together, or not at all.

WHY THIS EDITORIAL MATTERS FOR YOUR EXAM

Biodiversity loss, ecosystem services and the governance of natural resources are central GS3 themes, and the intergovernmental science on biodiversity is exactly the kind of authoritative material UPSC draws on. Freshwater biodiversity is an under-studied angle that rewards a candidate who can go beyond the usual forest-and-tiger framing.

The wider significance is conceptual: the editorial introduces the nexus approach, the idea that biodiversity, water, food, health and climate are one interlinked system, which is increasingly how global environmental policy is framed.

GS Paper 3: Conservation, environmental pollution and degradation; biodiversity and ecosystems; the interlinkages between water, food and environmental security.

For **Prelims**, hold the specifics: the **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)** produces global assessments, and its **Nexus Assessment** links **biodiversity, water, food, health and climate**; the **Living Planet Index** tracks the average change in wildlife populations and shows especially steep **freshwater** declines; freshwater species are hit by many stressors together, including **pollution, sediment, water abstraction, dams and invasive species**; India protects wetlands under the **Wetlands (Conservation and Management) Rules, 2017** and lists **Ramsar sites** under the Ramsar Convention; and the **Kunming-Montreal Global Biodiversity Framework** sets the **30x30 target** to conserve 30 per cent of land, inland waters and seas by 2030.

For **Mains**, the argument to carry is that protecting rivers and wetlands requires a nexus approach that manages water, pollution and land as one system, because sector-by-sector conservation cannot address stressors that arrive together.

BACKGROUND AND CONTEXT

Freshwater ecosystems, rivers, lakes, wetlands and floodplains, cover a tiny fraction of the planet's surface yet host a disproportionate share of its species. They also sit at the bottom of the landscape, which is their curse. Whatever pollution, sediment, fertiliser runoff or effluent the surrounding land produces eventually drains into water. A forest may face one dominant threat, such as clearing. A river faces many at once.

The **IPBES**, often called the biodiversity equivalent of the climate science panel, synthesises global research to inform policy. Its **Nexus Assessment** makes the case that biodiversity cannot be saved in isolation, because it is entangled with water security, food production, human health and the climate. A decision about a dam, a crop or a city's sewage is also a decision about biodiversity, whether or not anyone intended it to be.

The evidence is stark. The **Living Planet Index**, which tracks trends in monitored wildlife populations, shows freshwater populations falling faster and further than terrestrial or marine ones. The stressors compound: **water abstraction** for irrigation and cities lowers flows; **dams** fragment rivers and block fish migration; **pollution and sediment** choke aquatic life; and **invasive species** displace native ones. In India, this plays out across rivers and wetlands, many of them **Ramsar sites** meant to be protected under the **Wetlands (Conservation and Management) Rules, 2017**, and it sits against the global commitment of the **Kunming-Montreal Global Biodiversity Framework** and its **30x30 target**.

THE CORE ARGUMENT / ISSUE

The central argument is that freshwater and coastal biodiversity is collapsing faster than terrestrial biodiversity because these habitats accumulate multiple stressors simultaneously, and that only a nexus approach, managing water, pollution and land together, can reverse the decline.

Why Freshwater Loses Faster

A river is the drain of its entire catchment, so it absorbs pollution, sediment, abstraction, damming and invasion at the same time. No single intervention addresses all of these, which is why freshwater declines outpace those on land, where threats are often more singular and localised.

The Nexus Is Not a Slogan

Water, food, health, climate and biodiversity are one system: irrigation for food removes water from rivers; dams for power fragment habitat; sewage for cities poisons wetlands. Treating any one of these in isolation shifts the harm elsewhere. The nexus framing forces decision-makers to see the trade-offs they are already making unknowingly.

India's Rivers and Wetlands Are the Test Case

India's wetlands are protected on paper by the 2017 Rules and by Ramsar listings, yet many degrade under exactly the compounded pressures the science describes. The gap between listing a wetland and governing its whole catchment is where the nexus approach must be applied.

STRESSOR	SOURCE	NEXUS LINK
Water abstraction	Irrigation, cities	Food and urban water versus river flow
Dams and barrages	Hydropower, storage	Energy and storage versus habitat connectivity
Pollution and sediment	Sewage, industry, farm runoff	Health and industry versus water quality
Invasive species	Trade, altered flows	Ecosystem stability versus disturbance

HOW TO THINK ABOUT THIS (ANALYTICAL FRAME)

Think in catchments, not sites. A wetland cannot be saved by fencing it while its feeder river is dammed, drained and polluted upstream, so the unit of management must be the whole basin. Apply the cumulative-stress lens: harms that are tolerable one at a time become lethal in combination, which is precisely why freshwater life collapses faster. Add the trade-off lens the nexus demands: every choice about food, energy, water or a city is also a biodiversity choice, so those trade-offs should be made openly rather than by default. Finally, apply the co-benefit lens: managing water, pollution and land together does not only protect species, it also secures drinking water, buffers floods and stores carbon, so the nexus approach pays for itself many times over. Read this way, freshwater biodiversity is not a niche concern. It is the clearest signal of how well we govern the landscape as a whole.

THE DIAGRAM IN WORDS

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Land sends pollution, sediment, abstraction, dams and invasives downhill -> rivers and wetlands receive every stressor at once -> freshwater species collapse faster than forest species (steep Living Planet Index declines) -> IPBES Nexus Assessment links water, food, health, climate and biodiversity -> sector-by-sector conservation fails because stressors arrive together -> manage the whole catchment: water plus pollution plus land -> rivers and wetlands recover, and drinking water, flood buffering and carbon storage recover with them
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WAY FORWARD

1. **Govern by river basin.** Manage each wetland and river as part of its whole catchment, coordinating abstraction, pollution control and land use rather than protecting isolated sites.

2. **Restore environmental flows.** Guarantee that dams and irrigation leave enough water in rivers to sustain aquatic life, treating flow as a right of the ecosystem, not a leftover.
3. **Cut pollution at source.** Enforce effluent and sewage treatment across the catchment so wetlands stop absorbing the land's untreated waste, backed by the Wetlands Rules, 2017.
4. **Apply the nexus in planning.** Require that decisions on food, energy and cities explicitly assess their impact on water and biodiversity, aligning with the Global Biodiversity Framework's 30x30 target.

PYQ LINKAGE AND PRACTICE

UPSC regularly examines biodiversity and ecosystem services (2018 Mains on how the Biological Diversity Act aids conservation; recurring Prelims questions on Ramsar sites, wetlands and ecosystem services; 2020 on the relationship between biodiversity and human wellbeing). This editorial anchors those with the IPBES Nexus Assessment and the freshwater-decline argument.

Practice question: "Freshwater biodiversity is declining faster than terrestrial biodiversity because rivers and wetlands accumulate multiple stressors at once." Examine this statement and explain how a nexus approach can strengthen conservation of India's rivers and wetlands. (15 marks, 250 words)

Sources: Down To Earth, IPBES

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